Space Weather Forecast

Issued on Thursday, 25 November 2021 at 12:27 Local

This forecast provides a four-day assessment of space weather events. The probabilities stated below are for reaching or exceeding the given levels. For more information about space weather impacts please see the Met Office Space Weather Scales https://www.metoffice.gov.uk/weather/learn-about/space-weather/uk-scales

Space Weather Forecast Headline: Chance of Minor Geomagnetic Storm (G1) later in UTC weekend.

Analysis of Space Weather Activity over past 24 hours

Solar Activity: Solar activity has been very low over the past 24 hours, with no X-ray flares of note. There is currently one active sunspot region on the visible side of the sun. This group saw some proliferation and growth in its trailing spots in the period, with the whole group spreading in latitude by the period's end.

No new Earth-directed Coronal Mass Ejections (CMEs) were identified in available imagery.

Solar Wind / Geomagnetic Activity: The solar wind was characteristic of the decaying influence of a fast regime, probably that emanating from a southern solar hemisphere 'coronal hole'. Solar wind speeds showed a flat or perhaps very weak decline in the period, with an erratic oscillation within slightly elevated levels. Both the number of particles comprising the solar wind and their associated magnetic field were unremarkable and near background over the same period.

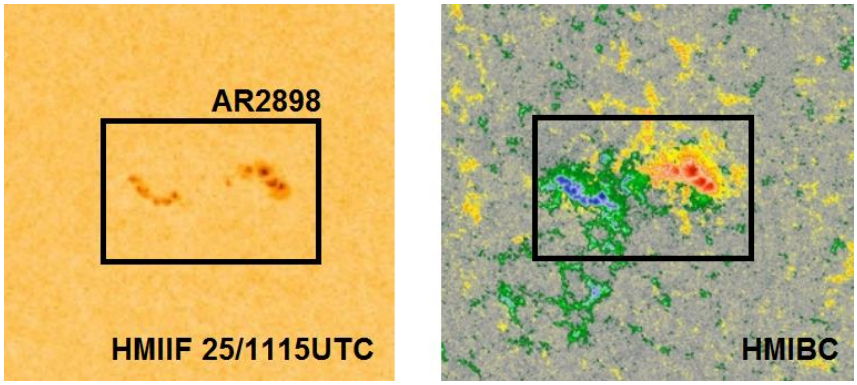
The net result of the above solar wind measures was quiet geomagnetic activity throughout, well below Minor Storm G1.

Energetic Particles / Solar Radiation: No solar radiation storms were observed.

Four-Day Space Weather Forecast Summary

Solar Activity: Solar activity is expected to be low, with a now slightly increased daily 30% chance of C-class flares, owing to growth in the current sole facing-side sunspot.

Figure 1: Visible and magnetic images of the current sole facing-side sunspot (AR2898).



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Met Office Space Weather Forecast

Solar Wind / Geomagnetic Activity: A CME from a 'filament eruption' (arc of plasma) leaving the sun 24/1300UTC may reach Earth around the turn of the UTC days Saturday 27 into Sunday 28 November, i.e. around 27/2300UTC. There is considered a chance of Minor Geomagnetic Storm G1 from this event, probably peaking within the UTC day of Sunday 28 November.

Mainly quiet geomagnetic activity is otherwise expected prior to any CME arrival.

Energetic Particles / Solar Radiation: No solar radiation storms are expected.

Geomagnetic Storms:

Geo-Magnetic Storm Probability (Exceedance)	Level	Past 24 Hours (Yes/No)	Day 1 (00-24 UTC) (%)	Day 2 (00-24 UTC) (%)	Day 3 (00-24 UTC) (%)	Day 4 (00-24 UTC) (%)
Minor or Moderate	G1 to G2	No	1	1	10	30
Strong	G3	No	1	1	1	5
Severe	G4	No	1	1	1	1
Extreme	G5	No	1	1	1	1

Radio Blackouts - X Ray Flares:

X Ray Flares Probability	Level	Past 24 Hours (Yes/No)	Day 1 (00-24 UTC) (%)	Day 2 (00-24 UTC) (%)	Day 3 (00-24 UTC) (%)	Day 4 (00-24 UTC) (%)
Active	R1-R2 M Class	No	1	1	1	1
Very Active	R3 to R5 X	No	1	1	1	1

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Solar Radiation Storms - (High Energy Protons):

Radiation Storms Probability (Exceedance)	Level (cm^{-2} sr^{-1} s^{-1})	Past 24 Hours (Yes/No)	Day 1 (00-24 UTC) (%)	Day 2 (00-24 UTC) (%)	Day 3 (00-24 UTC) (%)	Day 4 (00-24 UTC) (%)
Active	**≥ S1**	No	1	1	1	1
Very Active	**≥ S3 ***	No	1	1	1	1
* S3 ≥ 10 MeV ≥ 1000 pfu and / or ≥ 50 MeV ≥ 10 pfu. (pfu = $cm^{-2}sr^{-1}s^{-1}$)						

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